

1 THE EMBODIMENTS OF THE INVENTION IN WHICH AN
2 EXCLUSIVE PROPERTY OR PRIVILEGE IS BEING CLAIMED ARE DETAILED
3 AS FOLLOWS:
4

5 1. A process for creating openings between a wellbore and a
6 formation comprising:

7 running-in a tubing string into the wellbore to position a perforating gun
8 adjacent a perforating zone;

9 pressurizing the tubing string to a first pressure to actuate the
10 perforating gun and produce openings between the wellbore and the formation;

11 pressurizing the tubing string to a second pressure to actuate a
12 downhole injection port adjacent the perforating gun; and

13 circulating fluid at a rate through the downhole injection port for
14 conveying debris up the wellbore.
15

16 2. The process of claim 1 wherein prior to actuating the perforating
17 gun further comprising:

18 opening an uphole injection port located on the tubing string uphole of
19 the downhole injection port; and

20 adjusting the hydrostatic head above the perforating gun.
21

22 3. The process of claim 2 wherein the adjusting of the hydrostatic
23 head above the perforating pun further comprises circulating low density fluid
24 through the uphole injection port for displacing wellbore fluid.
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1 4. The process of claim 2 wherein the adjusting of the hydrostatic
2 head above the perforating gun further comprises injecting produced fluid through
3 the uphole injection port.

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5 5. The process of claim 2 further comprising closing the uphole
6 injection port after the hydrostatic head above the perforating gun has been
7 adjusted.

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9 6. The process of claim 1 wherein after actuating the downhole
10 injection port further comprising lowering the downhole injection port from uphole of
11 the openings to a location downhole of the openings.

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13 7. The process of claim 6 wherein the circulating fluid is performed
14 while lowering the downhole injection port from uphole of the openings to a location
15 downhole of the openings.

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17 8. The process of claim 7 wherein the fluid is a low density foam.

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19 9. The process of claim 1 further comprising stroking the tubing
20 string to periodically alternate the downhole injection port between a location
21 downhole of the openings to a location uphole of the openings.

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1 10. The process of claim 1 wherein after the debris has been
2 conveyed up the wellbore further comprising killing the wellbore and removing the
3 tubing string from the killed wellbore.

4
5 11. An apparatus for creating openings through casing between a
6 wellbore and a formation comprising:

7 a tubing string extending downhole in the casing to the formation and
8 forming an annulus therebetween;

9 a perforating gun at the downhole end of the tubing string and actuatable
10 at a first pressure; and

11 a downhole injection port located on the tubing string adjacent the
12 perforating gun and being pressure-actuatable at a second pressure, so that

13 when the tubing is pressurized to the first pressure the
14 perforating gun is actuated for forming openings in the casing, and

15 when the tubing is pressurized to the second pressure the
16 downhole injection port is opened to enable circulation fluid from the tubing
17 and up the annulus so as to continuously remove perforation debris from the
18 wellbore.

19
20 12. The apparatus of claim 11 wherein the fluid is a low density
21 foam.

1 13. The apparatus of claim 11 where the downhole injection port is
2 located uphole of the perforating gun.

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4 14. The apparatus of claim 11 where the downhole injection port is
5 an 'S' Drain or burst plug.

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7 15. The apparatus of claim 11 further comprising a pump at surface
8 for pressurizing the tubing string to the first and second pressures.

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10 16. The apparatus of claim 11 further comprising means for
11 applying a compressed or pressurized gas for pressurizing the tubing string to the
12 first and second pressures.

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14 17. The apparatus of claim 11 further comprising an uphole injection
15 port for adjusting hydrostatic head above the perforating gun.

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17 18. The apparatus of claim 17 where the uphole injection port is
18 located uphole of the downhole injection port.

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20 19. The apparatus of claim 18 where the uphole injection port is a
21 rotational valve.